

## REMARKS

### Interview Summary

Applicant acknowledges the telephone interview of April 13, 2006 in which was discussed *Chang* and certain proposals for amending claims 1, 12, and 23. The Examiner agreed that the proposed amendments would overcome the cited art.

### Claim amendments

Applicant cancels claims 1 and 12 and rewrites claims 2 and 13 in independent form. Applicant further amends those claims to include an additional limitation. Applicant amends claim 23-29 to conform to claim 13 and its prgeny.

### Section 102 rejection of claims 2 and 13

As amended, claim 2 now recites:

a processor configured to estimate, on the basis of both the measured photodetector signal and the measured fiber signal, a location of a discrete area on a surface of the scintillator block from which the photons emerge

In *Chang*,

- the photodetector array **22** is used to estimate the *x-y* coordinate of the interaction;  
and
- the wavelength-shifting fibers **12** are used to estimate the *z*-coordinate of the interaction.

In contrast, claim 2 requires that the photodetector signal and the fiber signal *both* be used in connection with estimating an *x-y* coordinate, i.e. the location of a *discrete area* on the scintillator block's surface. In some embodiments, the "discrete area" referred to above would correspond to the face of a pillar on the surface of the scintillator block. However, one can imagine grouping sets of two or more pillars into "virtual pillars" that are either contiguous or discontinuous. The term "discrete area" is intended to also encompass such cases.

This difference in the configuration of the processor results in significant performance differences. For example, in *Chang*, a noisy photodetector signal dooms the estimate of  $x$ - $y$  coordinate. The signal from the wavelength-shifting fibers, no matter how good, cannot be used to help estimate the  $x$ - $y$  coordinate. In contrast, in the apparatus recited by claim 2, since both the photodetector and fiber signals are available to estimate the  $x$ - $y$  coordinate, a poor photodetector signal can be partially compensated for by a good fiber signal and vice versa.

Support for the proposition that the *Chang* system operates as set forth above can be found throughout *Chang*. In particular, the last paragraph of *Chang*'s claim 1 recites

"wherein the first sensor array provides a measurement of the  $x$ - and  $y$ -positions of the interaction site and the second sensor array provides a measurement of the depth of interaction."

It is apparent, therefore, that *Chang* fails to anticipate the subject matter of claim 2. Claims 3-11 all include the limitations of claim 2 and are therefore patentable for at least the same reasons as claim 2.

Independent claim 13 and its progeny recite limitations similar to those of claim 2 and its progeny. Hence, those claims are patentable for at least the same reasons.

### **Section 103 rejection of claim 23**

Independent claim 23 and its progeny recite limitations similar to those of claim 2 and its progeny. Hence, those claims are patentable for at least the same reasons.

### **Summary**

As best understood from the telephone interview, the foregoing amendments overcome the rejection based on *Chang*. Accordingly, Applicant looks forward to a notice of allowance.

Now pending in this application are claims 2-11 and 13-39, of which claims 1, 13, and 23 are independent. No additional fees are believed to be due in connection with the filing of this

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response. However, to the extent fees are due, or if a refund is forthcoming, please adjust our deposit account 06-1050, referencing attorney docket "12355-010001."

Respectfully submitted,

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